



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/768,439	02/02/2004	Seiichi Higaki	HITA.0508	9171

7590 11/09/2005

REED SMITH LLP  
Suite 1400  
3110 Fairview Park Drive  
Falls Church, VA 22042

EXAMINER

FARROKH, HASHEM

ART UNIT PAPER NUMBER

2187

DATE MAILED: 11/09/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/768,439

Applicant(s)

HIGAKI ET AL.

Examiner

Hashem Farrokh

Art Unit

2187

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 20 October 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1, 6, 7 and 14-16 is/are rejected.
- 7) ☒ Claim(s) 2-5 and 8-13 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 02 February 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

*This Office Action is in response to the Applicant's Remarks file on October 20, 2005. There are a total of 16 claims pending in the application; claims 1 and 14-16 have been amended; no claims have been canceled or added.*

**INFORMATION CONCERNING CLAIMS:**

***Claim Rejections - 35 USC § 103***

*The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:*

*(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.*

*Claims 1, 6-7, and 14-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent Publication No. 2003/0187847 A1 to Lubbers et al. (hereinafter Lubbers) in view of U.S. Patent No. 6,912,588 B1 to Jardin et al. (hereinafter Jardin).*

1. *In regard to claim 1, Lubbers teaches:*

*"A storage system (e.g., see abstract) comprising a first storage control device and a second storage control device (e.g., see paragraph 44, page 4; elements 105 in Fig. 5) connected so as to be capable of communicating with each other and executing data processing according to a request from a host device," (e.g., see paragraphs 38 and 42, page 4; paragraph 49, page 5; Fig. 1). Lubbers teaches a networks storage system with multiple storage sites (e.g., SITES1-SITES3). Each storage site includes a*

*storage cell which contains at least one storage cell (e.g., elements 101A-101D) and a storage controller (e.g., elements 105). Storage sites and the hosts (e.g., elements 105) are all linked together by a network (e.g., elements 103).*

“and wherein said predetermined data processing function includes direct backup, internal copying process between a pair of volumes, mirroring, or remote copying.”  
**(e.g., see paragraph 3 in page 1; paragraphs 11, and 26 in page 6).** *For example remote copying between source and destination is a data processing function recited in the claim. However Lubbers does not expressly teach: “wherein the first storage control device comprises: first control means for judging whether or not the second storage control device can execute a predetermined data processing function relating to a first request received from the host device and, only after said first control means judges that the second control device can execute said predetermined data processing function, said first control means generates, a second request corresponding to the first request for taking over said predetermined data processing function by the second storage control device and transmits it to the second storage control device, wherein the second storage control device comprises: second control means for executing the predetermined data processing function based on the second request received from the first storage control device such that the second storage control device takes over said predetermined data processing function relating to a first request from the first storage control device,”*

*Jardin teaches: “wherein the first storage control device comprises: first control means (e.g., see element 420 in Fig. 4) for judging whether or not the second storage*

control device (**e.g., see element 430 in Fig. 4**) can execute a predetermined data processing function relating to a first request received from the host device and, (**e.g., see column 8, lines 13-18; Fig. 4**) only after said first control means judges that the second control device can execute said predetermined data processing function (**e.g., see column 8, lines 32-33; Fig. 4**), said first control means generates, (**e.g., see column 8, lines 52-62; Fig. 4**) a second request corresponding to the first request for taking over said predetermined data processing function by the second storage control device and transmits it to the second storage control device," (**e.g., see column 8, lines 4-62; Figs. 4-5**).

wherein the second storage control device comprises: second control means (**e.g., see element 430 in Fig. 4**) for executing the predetermined data processing function based on the second request received from the first storage control device such that the second storage control device takes over said predetermined data processing function relating to a first request from the first storage control device," (**e.g., see column 10, lines 4-6; Figs. 6**) *for a second server to receive and execute a command packet from a first server (e.g., a broker). The broker server receives a request from a client to execute a task. The broker server makes a determination (e.g., judges) whether to send a request, related to the client request, to a second server to execute the client or host related command request.*

*Disclosures by Jardin and Lubbers are analogous because both references teach managing data (e.g., load balancing) in client server networks and storage area networks .*

Art Unit: 2187

*At the time of invention it would have been obvious to a person of ordinary skill in art to modify the storage area network taught by Lubbers to include command request and packet transmitting method disclosed by Jardin.*

*The motivation for using the method of network data management, as taught by column 2, lines 20-30, of Jardin is to provide more efficient management of server utilization.*

*Therefore, it would have been obvious to combine disclosures by Jardin with Lubbers to obtain the invention as specified in the claim.*

2. In regard to claim 6, Lubbers teaches:

*"wherein the first storage control device retains function management information showing data processing functions executable by the second storage control device," (e.g., see paragraph 44, page 4; Figs. 1-5). For example controller 105 can be configured to execute data replication management (DRM) for copying data from source to destination storage system*

*"and the first control means judges whether or not the second storage control device can execute the predetermined data processing function relating to the first request based on the function management information." (e.g., see paragraph 54, page 6). For example a determination is made whether the destination or second controller has sufficient resources for backup or remote copying.*

3. In regard to claim 7, Lubbers teaches:

"wherein the function management information is generated manually or automatically at the time of definition of the storage system configuration." (**e.g., see paragraph 37, page 4; Figs. 1-5**). *For example the data management and monitoring can be performed by each user through data replication management console (DRMC) which is a part of controller 105.*

4. In regard to claim 14, Lubbers teaches:

"A control method for a storage system comprising a first storage control device and a second storage control device connected to communicate with each other thereby executing data processing according to requests from a host device," (**e.g., see abstract; summary**).

"wherein the first storage control device performing the steps of:"

"receiving a first request from the host device," (**e.g., see paragraph 60, page 6**).

"and wherein said predetermined data processing function includes direct backup, internal copying process between a pair of volumes, mirroring, or remote copying." (**e.g., see paragraph 3 in page 1; paragraphs 11, and 26 in page 6**). *For example remote copying between source and destination is a data processing function.*

However, Lubbers does not expressly teach: "judging whether or not the second storage control device can execute a predetermined data processing function relating to the received first request, generating a second request corresponding to the first request for taking over said predetermined data processing function by the second

storage control device only after said storage control device judges that the second storage control device can execute said predetermined data processing function, wherein the second storage control device executing the steps of: receiving the second request from the first storage control device, and executing the predetermined data processing function based on the received second request such that the second storage control device takes over said predetermined data processing function relating to a first request from the first storage control device,”

Jardin teaches: “judging whether or not the second storage control device can execute a predetermined data processing function relating to the received first request **(e.g., see column 8 lines 13-18)**, generating a second request corresponding to the first request for taking over said predetermined data processing function by the second storage control device only after said storage control device judges that the second storage control device can execute said predetermined data processing function, **(e.g., see column 8 lines 52-62; Fig. 5)** and transmitting the generated second request to the second storage control device, and” **(e.g., see column 8 lines 52-53; Fig. 5)**.

wherein the second storage control device **(e.g., element 430 in Fig. 4)** executing the steps of: receiving the second request from the first storage control device, and executing the predetermined data processing function based on the received second request such that the second storage control device takes over said predetermined data processing function relating to a first request from the first storage control device,” **(e.g., see column 10 lines 4-6; Fig. 6)**. *For explanation regarding the motivation for combining the teaching of the two references, please refer to claim 1 above.*



5. In regard to claim 15, Lubbers teaches:

"A first storage control device connected to a second storage control device and a host device to communicate with each other for executing data processing according to a request from the host device, comprising:" **(e.g., see paragraph 30, page 3; Figs. 1-5).**

"receiving means for receiving a first request from the host device," **(e.g., see abstract; summary; Figs. 1-5).**

"and wherein said predetermined data processing function includes direct backup, internal copying process between a pair of volumes, mirroring, or remote copying." **(e.g., see paragraph 3 in page 1; paragraphs 11, and 26 in page 6).**

*However*, Lubbers does not expressly teach: "judging means for judging whether the second storage control device can execute a predetermined data processing function relating to the received first request, requesting means for taking over said predetermined data processing function by the second storage control device only after said first storage control device judges that the second storage control device can execute the predetermined data processing function, and transmitting means for transmitting the generated second request to the second storage control device such that the second storage control device takes over said predetermined data processing function relating to a first request from the first storage control device,"

Jardin teaches: "judging means for judging whether the second storage control device can execute a predetermined data processing function relating to the received first request **(e.g., see column 8 lines 13-18)**, requesting means for taking over said

Art Unit: 2187

predetermined data processing function by the second storage control device only after said first storage control device judges that the second storage control device can execute the predetermined data processing function (**e.g., see column 8 lines 4-51; column 10, lines 4-5; Figs. 4-5**), and transmitting means for transmitting the generated second request to the second storage control device such that the second storage control device takes over said predetermined data processing function relating to a first request from the first storage control device," (**e.g., see column 8 lines 52-53; element 524 in Fig. 5**). *For explanation regarding the motivation for combining the teaching of the two references, please refer to claim 1 above.*

6. In regard to claim 16, Lubbers teaches:

"A program stored in a computer readable medium connected to a second storage control device and a host device to communicate with each other for controlling a first storage control device thereby executing data processing according to a request from the host device, (**e.g., see paragraph 30, page 3; paragraph 65, page 7; Figs. 1-5**). comprising:"

"wherein said predetermined data processing function includes direct backup internal copying process between a pair of volumes, mirroring, or remote copying." (**e.g., see paragraph 3 in page 1; paragraphs 11, and 26 in page 6**).

*However*, Lubbers does not expressly teach: "a module for judging whether or not the second storage control device can execute a predetermined data processing function relating to the first request received from the host device, a module for generating a

second request corresponding to the first request when it is judged that the second storage control device can execute, and a module for transmitting the generated second request to the second storage control device from the first storage control device such that the second storage control device takes over said predetermined data processing function relating to a first request from the first storage control device,"

Jardin teaches: "a module for judging whether or not the second storage control device can execute a predetermined data processing function relating to the first request received from the host device (**e.g., see column 8 lines 13-18**), a module for generating a second request corresponding to the first request when it is judged that the second storage control device can execute (**e.g., see column 8 lines 52-62**), and a module for transmitting (**e.g., see column 8 lines 52-53**) the generated second request to the second storage control device from the first storage control device such that the second storage control device takes over said predetermined data processing function relating to a first request from the first storage control device," (**e.g., see column 10 lines 4-6**). *For explanation regarding the motivation for combining the teaching of the two references, please refer to claim 1 above.*

**ALLOWABLE SUBJECT MATTER**

*Claims 2-5 and 8 -13 are objected to as being dependent upon rejected based claims, but would be allowable if rewritten in correct and independent form including all of the limitations of the base claim and any intervening claims.*

1. *The primary reason for allowance of claims 2-3 and 8-13 in instant application is the combination with the following limitations: wherein the first storage control device provides a second storage area controlled by the second storage control device to the host device virtually as the first storage area under control of its own, and the first request requests the data processing relating to the first storage area.*
2. *The primary reason for allowance of claim 4 in instant application is the combination with the following limitations: wherein the second request is configured to have the similar data structure to the first request.*
3. *The primary reason for allowance of claim 5 in instant application is the combination with the following limitations: wherein the first control means confirms whether or not the second storage control device can execute the predetermined data processing function relating to the first request before transmitting the second request to the second storage control device.*

**: IMPORTANT NOTE :**

*If the applicant should choose to rewrite the independent claims to include the limitations recited in either one of the claims, the applicant is encouraged to **amend the title of the invention** such that it is descriptive of the invention as claimed as required by sec. 606.01 of the **MPEP**. Furthermore, the **summary of invention** and the **abstract** should be amended to bring them into harmony with the allowed claims as required by paragraph 2 of sec. 1302.01 of the **MPEP**.*

*As allowable subject matter has been indicated, applicant's response must either comply with all formal requirements or specifically traverse each requirement not compiled with. See 37 C.F.R. § 1.111(b) and § 707.07(a) of the M.P.E.P.*

### **Response to Applicant Remarks**

*The Applicant's remarks regarding the rejection of claims in the Office action 8/15/05 is persuasive. Additional reference has is being used to overcome the claims' amendment and the applicant's objection.*

### **Conclusion**

**This action is made final.** Applicant is reminded of the extension of time policy as set in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTH from the mailing date of this final action.

Art Unit: 2187

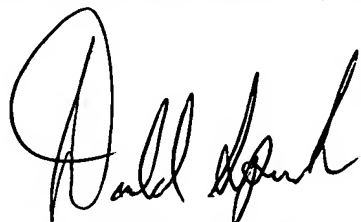
Any inquiry concerning this communication should be directed to Hashem Farrokh whose telephone number is (571) 272-4193. The examiner can normally be reached Monday-Friday from **8:00 AM to 5:00 PM**.

If attempt to reach the above noted Examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Donald A Sparks, can be reached on (571) 272-4201.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published application may be obtained from either private PAIR or Public PAIR. Status information for unpublished application is available through Private PAIR only. For more information about PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBS) at 866-217-9197 (toll-free).

  
HF

2005-11-02

  
**DONALD SPARKS**  
**SUPERVISORY PATENT EXAMINER**